December 15, 1979
ONE DOLLAR

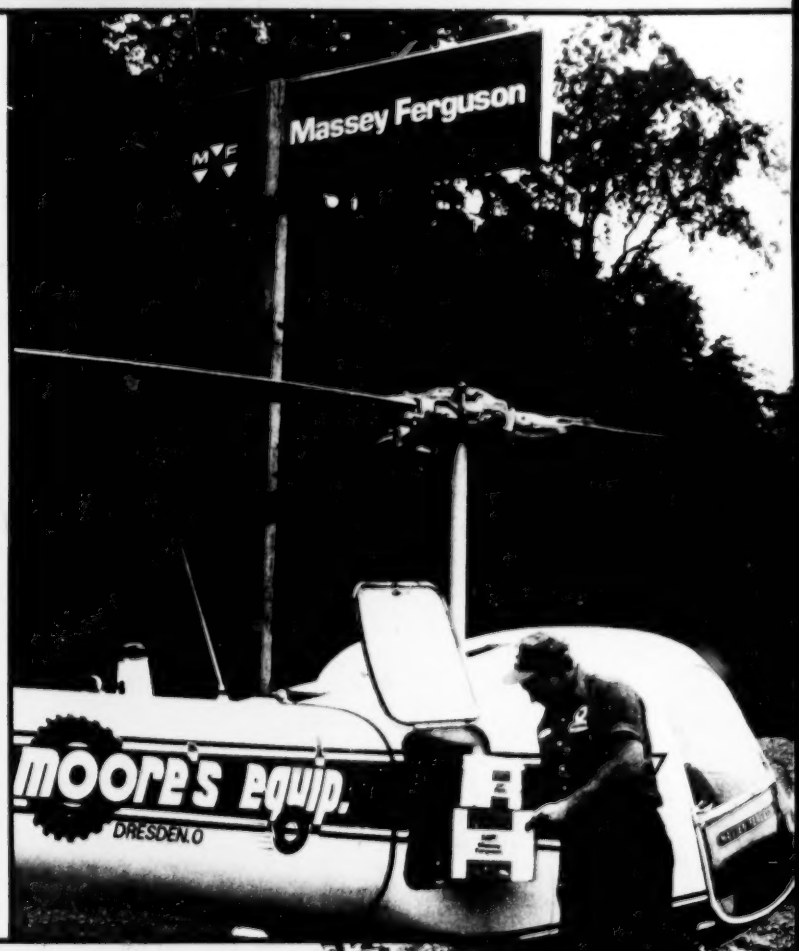
Serving the Farm and Industrial Equipment Industry Since 1886

Implement&Tractor

RECEIVED

Dealers who use aircraft in their operations

page 16



More About Metrics page 42

200140 078 911 0004 25
01019 129 03 J213
RICHARD HAGEMAN
** CONGRESSIONAL INFO SVC **
7101 WISCONSIN AVE
WASHINGTON DC 20014

BEST AVAILABLE COPY

December 15, 1979 • Vol. 94 • No. 24

Implement & Tractor

The Business Magazine of the Farm and Industrial Equipment Industry

in this issue...

16: **Dealers Who Use Aircraft In Their Operations.** Air power may not be practical for every dealer, but if he can justify the expense, providing emergency parts and repair service by aircraft does wonders for a dealer's reputation with farmers.

24: **Farm Equipment Wholesalers Assn.** Among all the other business at their convention in Toronto—which included installing Sol White as president—FEWA's young executives took steps toward organizing their numbers and just about everybody found time to worry about the effects of rising interest rates.

30: **Farm Equipment Manufacturers Assn.** considers saving on business car expenses, strategic marketing, and keeping mind and body healthy, among other topics. George Schumacher takes command.

34: **Agricultural & Industrial Manufacturers Representatives Assn.** A wide-ranging convention program includes talks on hiring salesmen, improving communications with manufacturers, "hanging loose." New president is Don Cohoon.

42: **Metric System, III—Measuring Mass, Pressure, Torque, Power and Force.** How to turn pascals, newtons, atmospheres—metric terms—into good English, and vice versa.

44: **Canadian Retail Sales Outlook for 1980.** It looks, on balance, to be fair enough. Interesting data about sales of front-wheel-assist tractors and on smaller imports.

DEPARTMENTS

What's Ahead 4	Industry in Motion 62
Retail Sales of Wheel Tractors 23	News Briefs 64
Auction Prices 36	New Literature 66
What's New 45	Farm Equipment Patents 66
Retail Sales of Selected Farm Equipment 58	Classified Ads 69
	Index to Advertisers 72

Controlled circulation postage paid at Shawnee Mission, Ks. 66201.
Postmaster: Return Form 3579 to Implement & Tractor, P.O. Box 12901, Overland Park, Ks. 66212.

© Copyright, 1979, INTERTEC PUBLISHING CORP. All rights reserved. Material may not be reproduced or photocopied in any form without written permission of publisher.

IMPLEMENT & TRACTOR
Editorial, advertising and circulation correspondence should be addressed to:
9221 Quivira Rd.
P.O. Box 12901
Overland Park, Kan. 66212
(a suburb of Kansas City, Mo.)
Telephone (913) 888-4664
Telex: 42-4156; Answerback-Intertec OLPK

EDITORIAL
Bill Fogarty, Editor
Gary Owens, Associate Editor
Charles G. Ewing, Editor, Red Book
Pat Blanton, Editor, Product File
Dudley Rose, Senior Art Director
Anita Blattner, Art Director
Irma Allread, Editorial Assistant

Contributing Editors:
Paul Crisford, Britain and Europe
Frank Buckingham, Agricultural Engineering
Melvin E. Long, Engineering and Production Topics

CIRCULATION
John Arnst, Director
Evelyn Rogers, Manager

ABP A member of American Business Press

A member of Audit Bureau of Circulations

ADVERTISING SALES
Emmett P. Langan, Director
Lou Bray, Production
(Regional advertising sales offices listed on ad index page.)

ADMINISTRATION
Geo. H. Seferovich, President
Emmett P. Langan, Publisher

IMPLEMENT & TRACTOR (USPS 481-780) (with which is combined Farm Implement News) is published twice monthly except in January and March, when third issues are published, and in July and December, when one issue only is published, by INTERTEC PUBLISHING CORP., 9221 Quivira Rd., Overland Park, Ks. 66212 (a suburb of Kansas City, Mo.).

Subscription information: Implement & Tractor is edited for persons in the farm and industrial equipment industry who function in the areas of retail sales and service, distribution sales and service, marketing, engineering, financing, manufacturing and general management. Subscription prices to qualified subscribers: U.S. and Canada, one year—$6, two years—$13; elsewhere, one year—$11, two years—$19. Subscription prices to all others: U.S. and Canada, one year—$25, two years—$50; elsewhere, one year—$34, two years—$66. Single copies, $1, except Annual Statistical Number, $3; Product File issue, $4; Red Book issue, $4. Adjustment necessitated by subscription termination at single copy rate. Extra charges for service on back issues. Allow 6-8 weeks for change of address and new subscriptions.

INTERTEC PUBLISHING CORP.

what's ahead...

I&T SINCE 1886

December 15, 1979

FORECASTING INDUSTRIAL EQUIPMENT SALES FOR 1980, the Industrial & Construction Equipment Div. of the Farm & Industrial Equipment Institute is anticipating a tough year for North America. Here's how the group summarized its 1980 outlook at its San Diego convention in December:

Product	Per Cent Change from 1979 United States	Canada
Rough-Terrain Forklifts	- 1.0	+ 1.5
Skid-Steer Loaders	+ 0.9	+ 2.4
Wheel-Log Skidders, 4WD, articulated	- 9.9	- 7.0
4WD Shovel Loaders	- 7.0	+ 3.6
Crawler Tractors under 90 horsepower	- 9.7	+ 0.5
Crawler Tractors over 90 horsepower	- 6.6	- 2.9
Crawler Loaders under 90 horsepower	-13.2	- 9.5
Crawler Loaders over 90 horsepower	- 9.2	- 7.0
Conventional Scrapers	- 5.8	- 7.5
Elevating Scrapers	- 7.9	- 5.0
Industrial Wheel Tractors	- 4.1	- 1.0
Backhoes for Wheel & Crawler Tractors	- 4.9	- 2.4
Trenchers	+ 0.9	- 0.8
Motor Graders	- 5.7	- 0.3
Off-Highway Haulers	+ 0.5	+ 0.5

The ICED Outlook Summary was reported by Charles F. Reed, marketing vice-president, North America, Fiat-Allis Construction Machinery, Inc.

FARM EQUIPMENT RETAIL SALES THROUGH OCTOBER continued to show increases over those of 1978's first 10 months in most categories, according to the Farm & Industrial Equipment Institute's flash report.

	Unit Retail Sales					
	October			January-October		
Equipment	1979	1978	Pct. Change	1979	1978	Pct. Change
Farm Wheel Tractors						
2-wheel drive						
40-100 hp	7,512	7,292	+ 3.0	58,794	57,746	+ 1.8
Over 100 hp	8,457	9,822	-13.9	56,070	56,383	- 0.6
Total 2-wheel drive	15,969	17,114	- 6.7	114,864	114,129	+ 0.6
4-wheel drive	1,721	1,422	+21.0	9,649	7,467	+29.2
Total tractors	17,690	18,536	- 4.6	124,513	121,596	+ 2.4
S-P Combines	8,646	8,614	+ 0.4	28,991	28,240	+ 2.7
Balers*	1,728	1,376	+25.6	18,130	20,259	-10.5
Forage Harvesters**	3,377	2,902	+16.4	11,120	10,308	+ 7.9
Mower-Conditioners	2,171	1,440	+50.8	24,588	24,076	+ 2.1

*Bales under 200 lbs. **Shear-bar type

Copyright, 1979, by Intertec Publishing Corp. All rights reserved.
Material may not be reproduced or photocopied in any form without written permission of publisher.

RETAIL SALES OF WHEEL TRACTORS*

(In Units)

	Total Wheel Tractors†				Cumulative Jan.-Aug., 1978				Cumulative for Jan.-Aug., 1979			
	Aug. 1978		Aug. 1979		Farm Type				Farm Type			
	Farm	Non-Farm	Farm	Non-Farm	2-Wheel Drive	4-Wheel Drive	Total Farm	Non-Farm	2-Wheel Drive	4-Wheel Drive	Total Farm	Non-Farm
Alabama	122	75	122	39	2,029	41	2,070	626	1,945	31	1,976	442
Alaska	1	4	2	1	16	.....	16	33	11	.....	11	26
Arizona	37	56	40	52	501	40	541	431	451	59	510	455
Arkansas	159	59	197	52	2,532	202	2,734	654	2,592	167	2,759	481
California	321	271	328	299	2,822	177	2,999	2,456	3,090	228	3,318	2,566
Colorado	76	48	90	42	640	71	711	517	706	129	835	463
Connecticut	16	22	12	18	124	3	127	240	136	.....	136	185
Delaware	9	7	9	3	124	11	135	62	165	12	177	39
Florida	180	131	167	119	1,451	44	1,495	1,083	1,441	49	1,490	1,205
Georgia	201	86	154	83	2,927	43	2,970	634	2,719	27	2,746	650
Hawaii	4	17	3	7	55	3	58	56	39	4	43	68
Idaho	61	16	65	17	727	84	811	190	689	106	795	139
Illinois	361	175	367	106	5,188	484	5,672	1,415	4,659	505	5,164	1,165
Indiana	193	86	182	50	3,442	291	3,733	929	2,892	303	3,195	648
Iowa	381	49	398	26	5,704	269	5,973	383	6,227	382	6,609	319
Kansas	301	31	530	31	2,459	330	2,789	287	2,893	458	3,351	267
Kentucky	213	94	193	60	3,475	71	3,546	753	3,238	61	3,299	583
Louisiana	158	87	124	60	1,752	146	1,898	854	1,714	109	1,823	624
Maine	23	17	20	9	168	.....	168	102	155	1	156	103
Maryland	35	44	44	29	532	18	550	448	579	25	604	354
Massachusetts	14	35	9	38	98	.....	98	316	105	.....	105	246
Michigan	164	99	134	67	2,173	165	2,338	975	1,933	164	2,097	955
Minnesota	363	61	390	54	4,006	320	4,326	424	4,245	635	4,880	527
Mississippi	185	51	179	37	2,466	121	2,587	581	2,445	87	2,532	466
Missouri	252	87	318	64	3,355	153	3,508	770	3,763	177	3,940	672
Montana	99	11	99	11	535	259	794	151	653	335	988	132
Nebraska	193	37	270	16	2,700	152	2,852	225	3,193	221	3,414	195
Nevada	6	12	10	15	60	.....	60	152	96	4	100	136
New Hampshire	8	6	9	8	97	.....	97	102	91	1	92	81
New Jersey	15	60	20	62	255	5	260	495	229	5	234	500
New Mexico	32	32	40	39	307	17	324	286	340	20	360	221
New York	141	120	165	61	1,804	63	1,867	1,069	1,788	72	1,860	789
North Carolina	177	91	108	45	2,948	38	2,986	789	2,819	49	2,868	677
North Dakota	219	29	215	16	1,716	536	2,252	201	1,755	858	2,613	166
Ohio	252	147	236	142	3,893	230	4,123	1,426	3,132	233	3,365	1,236
Oklahoma	262	69	421	72	2,039	168	2,207	617	2,438	319	2,757	523
Oregon	104	60	124	37	912	46	958	405	860	55	915	391
Pennsylvania	143	117	140	115	1,904	22	1,926	1,320	1,665	28	1,693	1,018
Rhode Island	5	7	1	3	18	.....	18	43	16	.....	16	30
South Carolina	74	53	62	47	1,318	19	1,337	421	1,331	28	1,359	348
South Dakota	167	9	165	9	1,648	165	1,813	135	1,689	231	1,920	141
Tennessee	237	93	170	71	3,300	57	3,357	784	2,926	52	2,978	677
Texas	663	303	902	389	5,781	240	6,021	3,048	6,827	364	7,191	2,911
Utah	44	39	50	29	434	10	444	326	459	11	470	312
Vermont	26	12	21	5	242	1	243	57	247	6	253	54
Virginia	162	104	134	39	1,684	9	1,693	748	1,745	7	1,752	507
Washington	160	85	140	69	1,047	115	1,162	690	1,126	135	1,261	625
West Virginia	44	35	45	40	421	.....	421	261	421	.....	421	185
Wisconsin	256	55	320	44	3,605	90	3,695	548	4,120	152	4,272	537
Wyoming	21	20	33	19	249	14	263	144	304	25	329	176
U.S. Government	1	12	46	42	42	3	45	575	105	.....	105	502
Miscellaneous‡	.....	.....	.....	129	61	2	63	1,060	43	3	46	1,047
TOTAL	7,341	3,328	8,021	2,917	87,788	5,346	93,134	31,295	89,250	6,933	96,183	27,786

Data released November 5, 1979, Farm & Industrial Equipment Institute.

*Figures do not include garden tractors, motor tillers or contractors off-highway types. Report includes units marketed by these firms: Allied Farm Equip. (Leyland Satoh); Allis-Chalmers; Belarus; J I Case; Deere; Deutz; Ford; Hy-Dynamics; International Harvester; JCB Excavators; K-D Mfg.; Long; Massey-Ferguson; Pettibone; R. M. Wade (Satoh); Steiger; Versatile; White; and Woods & Copeland.

‡Sales reported as miscellaneous are retail sales which cannot be classified by state or as U.S. Government. They include sales and dispositions that do not go through usual marketing channels such as gifts to non-profit organizations, intra-plant or company transfers, etc.

BEST AVAILABLE COPY

AUCTION PRICES OF USED EQUIPMENT

An exclusive I&T monthly report of actual prices paid recently at these leading national wholesale auctions.

Asterisk beside tractor price indicates highest bid offered on tractors which were not sold.

BILL ENLOW TRACTOR SALES
Tulsa, Okla.
(November 8, 1979

ALLIS-CHALMERS TRACTORS
D-17 diesel, 1958 (Rough) 1000

CASE TRACTORS
430, ldr., 1966 (Good) 3500
930 LP, 1964 (Good) 2900*
530, backhoe, 1963 (Good).....3975
580, backhoe, 1967 (Good).....4400

DEUTZ TRACTOR
90/06 diesel, (Good) 2900

FORD TRACTORS
9N, 1940 (Fair) 800
9N, 1941 (Fair) 800
9N, 1943 (Good).....1100
9N, 1944 (Good).....1050
9N, 1944 (Good).....1050
9N, 1945 (Fair) 850
9N, 1945 (Fair) 950*
9N, 1945 (Good).....1275
9N, 1946 (Good).....975
8N, 1947 (Good).....1350*
8N, 1947 (Good).....1250*
8N, 1948 (Fair) 1050
8N, 1948 (Fair) 900*
8N, 1948 (Good).....1100*
8N, 1949 (Fair) 930*
8N, 1949 (Good).....1150
8N, 1949 (Good).....1375
8N, 1949 (Good).....1275
8N, 1950 (Good).....1400
8N, 1950 (Good).....1350
8N, 1951 (Good).....1275
8N, 1951 (Good).....1500*
8N, 1952 (Good).....1400
8N, 1952 (Good).....1300
8N, 1952 (Good).....1400
8N, 1952 (Good).....1260
NAA, 1953 (Good).....1725
NAA, 1953 (Good).....1825
NAA, 1953 (Good).....1750*
Dexta, 1962 (Good).....1400
600, 1955 (Good).....2050
800, 1955 (Good).....2100
601, 1958 (Good).....2200*
801, 1957 (Good).....2000
801, ldr., 1961 (Good).....2850
861, 1961 (Good).....2400*
2000, 1965 (Good).....2600
2000, 1973 (Good).....3650*
3000 diesel, 1968 (Good) 3200
3000, 1969 (Good) 3300
3400, ldr., 1966 (Good).....3350
3600, 1977 (Excellent).....6750
4000, 1963 (Fair).....1550*
4000 diesel, 1967 (Good) 3350
4000 diesel, 1968 (Good) 3400*
4000 diesel, 1969 (Good) 3550*
4000 diesel, 1969 (Fair).....2875
4000 diesel, 1971 (Good) 3950
4000 diesel, ldr., 1972 (Good) ..4900
5000 diesel, 1968 (Good) 3900
5000 diesel, 1970 (Good) 4700
5000 diesel, 1971 (Good) 4650
5000 diesel, 1973 (Good) 5675
335 diesel, trencher, 1979 (New) 14,000*

INTERNATIONAL HARVESTER TRACTORS
Cub, 1948 (Good).....1070
Cub Loboy, 1968 (Good).....1950*
Cub 154, 1969 (Fair) 1700
Cub 154, ldr., 1969 (Good).....2600
C, 1950 (Good).....455
400 LP, 1955 (Good) 1300*
424 diesel, 1965 (Good) 2750
460, 1961 (Fair).....1100*
706 diesel, 1966 (Good) 4925
806 diesel, 1965 (Good) 4700*
1066 diesel, cab, duals, 1976 (Good).....16,500
2424, 1968 (Fair).....1100
4100 diesel, 4-W-D, cab, 1967 (Fair).....4200*

JOHN DEERE TRACTORS
H, 1944 (Good).....450
70, 1955 (Good) 825
420, 1957 (Good) 1200
2010, 1963 (Good) 1820*
2010, 1964 (Good) 1900*
3010 diesel, 1961 (Good) 3400*
3010 diesel, 1963 (Good) 4400
4010 LP, 1962 (Good) 3500
2020, 1968 (Good) 3000*
2020 diesel, 1969 (Good) 3925
3020 diesel, 1970 (Good) 5750

FERGUSON TRACTORS
30, 1952 (Good) 1100
30, 1953 (Good) 1050

MASSEY-HARRIS TRACTORS
555, 1948 (Fair).....300*
50, 1956 (Fair).....1350*
50, 1957 (Good) 1650

(*More...*)

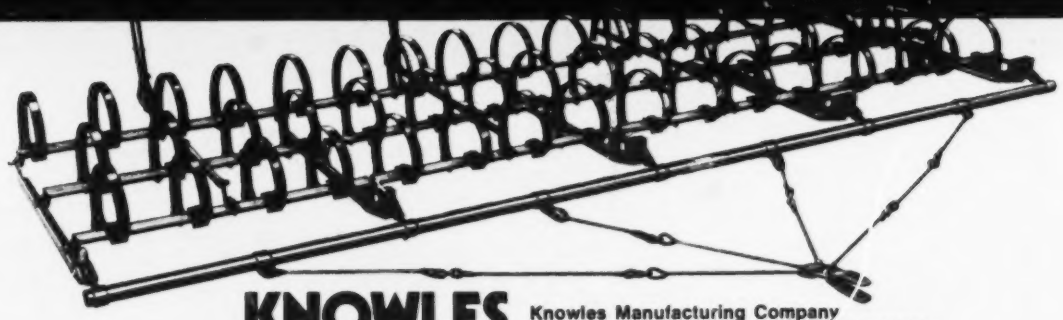
Fill out your line with this outstanding harrow...

- Tough 1" x 2" rectangular tooth bars
- Tempered spring teeth with bolt holes for replaceable points
- Solid 2" x 2" x ¼" angle steel frame
- Replaceable, high-carbon wear shoes
- High-carbon, tubular drawbar with heavy links and draft-adjusting plates
- Adjustable hitch and depth control levers

KNOWLES SPRING TOOTH HARROW

Show your prospect the rugged quality of a KNOWLES Spring Tooth Harrow, then if he wants to shop around, encourage it. Let him compare it detail-for-detail with any other unit available. He'll be back.

Write for details of KNOWLES attractive distributor plan.



KNOWLES Knowles Manufacturing Company
P.O. Box 97, Glenbeulah, Wisconsin 53023

Circle (22) on Reply Card

Auctions

(continued)

MASSEY-FERGUSON TRACTORS

35, 1959 (Good) 1675
35, 1960 (Fair) 1400*
35, 1960 (Fair) 1650
35 diesel, 1961 (Fair) 1500*
35 diesel, 1962 (Good) 2125
35 diesel, 1962 (Good) 2300
35 diesel, 1962 (Good) 2400
35, 1963 (Good) 2250
50, 1958 (Fair) 1475
50, 1960 (Good) 1690*
50, 1961 (Fair) 1550
50, 1961 (Good) 1600*
50 diesel, 1963 (Good) 2075
65 diesel, 1959 (Fair) 1800*
65 diesel, 1960 (Good) 2000
65 diesel, 1961 (Good) 1900
65, 1962 (Fair) 1650
65, 1962 (Good) 2000
65 diesel, 1962 (Good) 1950
65, 1963 (Good) 2050
65 diesel, 1963 (Good) 2200*
65 diesel, 1963 (Fair) 1850*
65 diesel, 1964 (Good) 2150*
65 diesel, 1964 (Good) 2500
65, ldr., 1964 (Good) 2750*
135, 1965 (Rough) 1675
135, 1966 (Good) 2825
135 diesel, 1966 (Good) 2950
135 diesel, 1967 (Fair) 2450
135 diesel, 1967 (Good) 3000
135, 1967 (Good) 2850
135 diesel, 1968 (Good) 2900*
135, 1968 (Good) 2700*
135, 1968 (Good) 2800
135 diesel, 1969 (Good) 3400
135 diesel, 1970 (Good) 3500
150, 1969 (Good) 3000*
150 diesel, 1973 (Excellent) 4250
165 diesel, 1971 (Good) 3750
165 diesel, 1973 (Good) 4000
175 diesel, 1968 (Fair) 3100*
175 diesel, 1972 (Good) 4450
180 diesel, 1969 (Good) 3700
230 diesel, 1979 (New) 6200
235 diesel, 1975 (Good) 4250*
245 diesel, 8 speed, 1980 (New) 7250
245 diesel, 1980 (New) 6750*
255 diesel, 1977 (Excellent) 6300
255 diesel, 1977 (Good) 5700
265 diesel, 1977 (Good) 7250*
1155 diesel, cab, 1977 (Good) 9750

MINNEAPOLIS-MOLINE TRACTORS

Jet Star diesel, ldr., 1960 (Good) 1950
Jet Star 3 diesel, 1967 (Good) 2500

OLIVER TRACTOR

1900 diesel, 1962 (Fair) 1700

SATOH TRACTOR

Beaver diesel, (Good) 2500*

YODER & FREY, INC.
Archbold, Ohio
(November 13, 1979)

ALLIS-CHALMERS TRACTORS

D19, 1962 (Good) 2575
D17, 1961 (Good) 2000*
D15, 1962 (Fair) 1400*
D12, 1961 (Fair) 900
WD45, 1952 (Rough) 510
WD, 1950 (Rough) 375*
WD, mo., 1947 (Fair) 350

DAVID BROWN TRACTORS

1210, 1974 (Good) 4400*
1200, 1968 (Fair) 3200*
1200, 1968 (Fair) 3000
990, 1972 (Good) 1750
990, (Rough) 850
885, duals, 1976 (Good) 5200*
880, (Rough) 700*

CASE TRACTORS

1270 diesel, 1971 (Rough) 8000*
1070 diesel, ... 9250
970 diesel, 1972 (Good) 5800*
930, 1967 (Good) 2750
930, 1967 (Fair) 2700*
580, backhoe, ldr., 1975 (Good) 7500*
530, backhoe, ldr., 1960 (Good) 3800*
500 diesel, 1950 (Rough) 1200
300, 1957 (Rough) 700*

JOHN DEERE TRACTORS

5020 diesel, 1968 (Good) 6400*
4520 diesel, 1972 (Good) 9000*
4020 diesel, 1968 (Excellent) 7700*
4020 diesel, 1968 (Good) 7100*
4020 diesel, 1966 (Good) 7400
4020 diesel, duals, 1965 (Fair) 6700*
4020 diesel, 1964 (Good) 6150
4020 diesel, 1964 (Good) 5100
4010, 1963 (Good) 4500
3020 diesel, 1967 (Good) 6750
2020, 1967 (Good) 3800
2010, ldr., 1964 (Good) 2500
1020, ldr., 1970 (Good) 4000
730, 1959 (Fair) 1700
730, 1959 (Fair) 1425
720 diesel, 1958 (Fair) 1175
620, 1957 (Good) 1550
420, 1956 (Good) 1775
70, 1954 (Fair) 1325
60, 1954 (Fair) 775
60, 1952 (Rough) 380
A, 1947 (Good) 450
A, 1945 (Rough) 300
H, cult. 475
MT, 1900 (Rough) 340

FORD TRACTORS

6000, 1961 (Fair) 1900*
5000, 1970 (Good) 4000*
5000, 1968 (Good) 3525
5000, 1968 (Good) 3300*
4000, 1974 (Good) 3825
4000, 1973 (Excellent) 5325
4000, 1971 (Fair) 3700
4000, ldr., 1961 (Good) 2000*
4000, 1961 (Rough) 1700*
4000, 1959 (Good) 1800*
2600, (New) 4800*
1600, mo., (New) 4200*
Jub., 1953 (Fair) 1025*
Maj., 1955 (Rough) 1000
860, 1957 (Fair) 1300*
700, 1955 (Good) 1425
640, 1957 (Fair) 1300*
8N, 1951 (Good) 1420
8N, 1950 (Good) 1200
8N, 1950 (Fair) 900
8N, 1949 (Rough) 800*
8N, 1947 (Rough) 575
9N, 1946 (Good) 1125
9N, 1946 (Fair) 935

INTERNATIONAL HARVESTER TRACTORS

2400, ldr., 1976 (Excellent) 6000*

(More...)

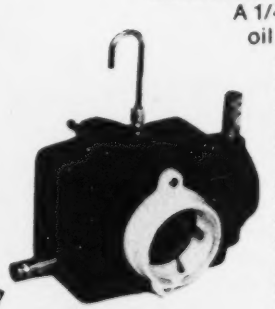
HEADACHE RELIEF
for Engine Operators

Murphy laboratories developed the LR-900 to provide fast relief for headache pain caused by daily oil check ups and mechanical failure resulting from insufficient crankcase levels. When set at the factory recommended oil level height, the **MURPHYMATIC®** LR-900 monitors crankcase lube oil level and automatically adds the proper amount prescribed by the engine manufacturer.

If something should go wrong, such as loss of oil supply, the LR-900 shuts down the engine and/or actuates an alarm.

LR-900
Used as directed, the LR-900 will act as an engine protectant, by monitoring oil levels and adding oil when needed automatically!
CAUTION: Extensive use of Murphy Products may be habit forming.
murphy
MFR., INC.

MURPHYMATIC® LR-900 is safe to use on larger engines, too! A 1/4 inch inlet port allows for rapid refilling after an oil change. One gallon of 40-weight oil can be metered in six minutes due to the new "thumb valve metering design".



Take **MURPHYMATIC®** LR-900 and stop worrying about engine lube oil levels.

Use only as directed and remember to follow installation instructions. If severe engine problems persist, consult your engine specialist.

Also available in explosion proof model (LR-900 EX). Write or call for complete information on the LR-900.

ENGINEERING NEW ANGLES TO EQUIPMENT MONITORING AND CONTROL

FRANK W. MURPHY MANUFACTURER INC. — P.O. Box 45248, Tulsa, Oklahoma 74145 — 918/627-3550
MURPHY SOUTHERN DIVISION — P.O. Box 36838, Houston, Texas 77036 — 713/668-4393
MURPHY SAFETY SWITCH OF CALIFORNIA — P.O. Box 788, Palmdale, California 93550 — 805/947-7106
FRANK W. MURPHY LIMITED — 178 High Street, Teddington, Middlesex, England — -01/977-0193
MURPHEK PTY. LTD. — Parametta Rd & Skarrat, Auburn, N.W.S. Australia — 648-1203

Circle (24) on Reply Card

Auctions

(continued)

1566 diesel, 1975 (Good).....11,000*
1466 diesel, 1973 (Excellent).....11,750*
1456 diesel, 1970 (Good).....8000*
1256 diesel, 1972 (Good).....7500*
1206 diesel, 1967 (Good).....6450
1066 diesel, 1976 (Good).....9700*
1066 diesel, 1975 (Good).....9300
856 diesel, 1970 (Excellent).....8300*
826, duals, 1971 (Good).....7200*
806, 1964 (Good).....5900
806, 1964 (Fair).....3800
806, 1963 (Rough).....3000*
706, 1964 (Fair).....3000*
606, (Rough).....1000*
560, 1960 (Good).....1950
560, 1959 (Fair).....1800*
450 diesel, 1957 (Fair).....1150
B414, ldr., 1964 (Good).....2350
B414, 1964 (Good).....1850
400, 1964 (Rough).....1550
400, 1964 (Rough).....1000
300, ldr., (Rough).....550
200, ...1225
Sup. MTA, 1954 (Good).....1100*
Sup. M, 1952 (Fair).....775*
M, 1951 (Good).....875*
M, 1950 (Good).....830
M, 1950 (Fair).....650*
H, 1948 (Rough).....375
H, 1948 (Rough).....325
Sup. C, cult., 1953 (Good).....710
Sup. C, cult., 1950 (Good).....700

MASSEY-FERGUSON TRACTORS

3165, ldr., 1968 (Good).....3500
1100 diesel, 1966 (Good).....5550*
245, (New).....6900*
180, 1967 (Good).....3600
180, 1966 (Rough).....2800*
175 diesel, 1969 (Good).....3500
165, 1971 (Good).....3450
165, 1965 (Fair).....2775
150, 1965 (Good).....3000
135, 1974 (Excellent).....4175
65, ldr., 1963 (Fair).....2600
65, 1963 (Rough).....1650
65, 1962 (Good).....2325
35, 1959 (Good).....2400

MINNEAPOLIS-MOLINE TRACTORS

U, (Rough).....300*
ZA, 1948 (Rough).....290

OLIVER TRACTORS

2050, 1970 (Fair).....6000*
880 diesel, 1958 (Good).....1300
77, (Fair).....340
66, ldr., 1954 (Good).....825*

WHITE TRACTORS

4-150 diesel, 4-W-D, 1975 (Excellent).....18,500

NOTES
Prices reported are for individual sales at wholesale on "as is," "cash and carry" basis.
Prices reported are NOT averages.

Condition classifications: EXCELLENT means—Engine: in perfect condition, 400 to 600 hours of use; Rubber: 80% tread remaining, no breaks or cracks; Paint: original and bright; General Appearance: excellent.

GOOD means—Engine: good running condition; Rubber: 70% tread remaining, no breaks or cracks; Paint: original paint or a good repaint job; General Appearance: good over-all.

FAIR means—Engine: possibly in need of a minor overhaul to restore; Rubber: 60% tread remaining, some cracking evident in side walls; Paint: only fair, weathered and some rust apparent; General Appearance: worn, some dents, minor parts such as gage covers missing or broken.

ROUGH means—Engine: obviously in need of a major overhaul; Rubber: smooth; Paint: scarred, weathered, rusty, needs painting urgently; General Appearance: dents, ruptures, broken parts, loose wires, some components such as lights broken, missing or inoperative.

DEMONSTRATOR means—used for demonstrating only and in practically new condition.

New for 1980
New from KING GOOSE

Optional Expanding Sides with Finger Tip Controls

KGA 12 SUPER KING GOOSE COMBINE TRAILER
New heavier duty axle, suspension system and heavier main frame result in a hard working combine trailer capable of hauling up to 24,000 lbs. payload. Optional hydraulic expanding sides increase width from 8' to 12' with the touch of a button. GVWR 30,000 lbs. (approx.)

KING GOOSE STRAWBOSS
Now two capacities to choose from: STRAWBOSS I - 36,000 lb. GVWR or STRAWBOSS II - 46,000 lb. GVWR. More versatile than ever, the Strawboss is the perfect answer to your combine or other large equipment hauling. Now Strawboss I or II is available with optional hydraulic power controls to extend or retract sides.

MANUFACTURED BY
KALYN COMPANY
HWY 84 WEST • GATESVILLE, TX 76528
CALL TOLL FREE 800 433 5521
(In Texas 800 772-5930)

KING GOOSE

Circle (26) on Reply Card

1980 in Canada looks OK

■OUTLOOK for 1980 retail sales of farm equipment in Canada appears to be fairly solid, with expectations of slight declines in unit volume in some items offset by increases in others, as well as by increases in unit sizes.

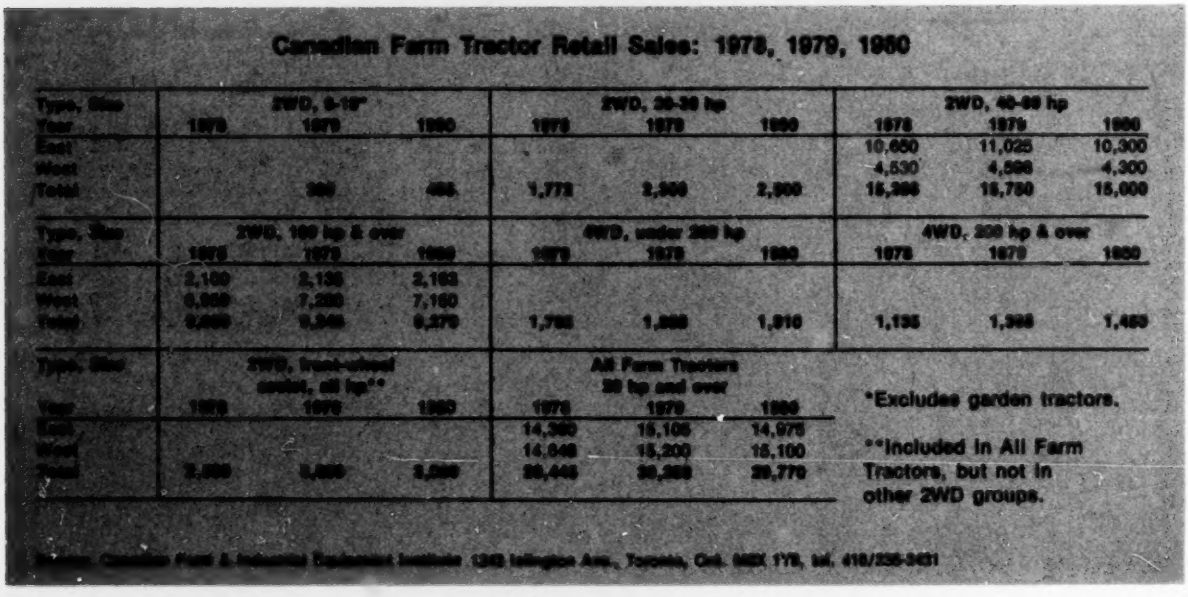
Canada's forecast, delivered at the annual convention of the Canadian Farm & Industrial Equipment Institute Nov. 13 in Toronto is a consensus effort by member firms of the group. Tractor sales and outlook information is provided in the accompanying box and provides details about smaller imports and front-wheel-assist units, not available in U.S. forecasts. Other information in the CFIEI outlook:

Product	1978 (actual)	1979 (est.)	1980 (forecast)
S-P combines			
East	1,050	1,068	1,075
West	3,829	3,747	3,625
Total	4,880	4,800	4,675
Corn heads	860	875	862
P-T combines	3,020	3,000	2,800
S-P swathers			
East	400	380	400
West	3,625	3,750	4,212
Total	4,000	4,050	4,600
P-T swathers	2,925	3,100	3,100
Balers (small)			
East	2,477	2,400	2,300
West	2,375	2,200	2,100
National	4,806	4,500	4,250
Balers (big)			
East	200	250	300
West	2,575	3,050	3,225
National	2,800	3,325	3,500
Forage harvesters	1,705	1,650	1,800
Mower-conditioners	4,400	4,800	5,000

Product	1978 (actual)	1979 (est.)	1980 (forecast)
Diskers	2,250	2,631	2,700
Chisel plows	5,160	5,063	5,275
Moldboard plows			
East	5,400	5,338	5,250
West	1,100	1,025	1,043
National	6,488	6,188	6,000
Disk harrows			
East	3,433	3,400	3,185
West	3,400	3,050	3,180
National	6,840	6,400	6,385
Grain drills			
East	1,650	1,650	1,600
West	6,470	6,125	6,125
National	8,175	7,550	7,550
Corn planters	1,825	1,850	2,000
Manure spreaders			
East	3,513	3,400	3,462
West	1,115	1,000	1,000
National	4,550	4,300	4,400
Grinder-mixers	2,150	2,100	2,100

CFIEI's new leadership

New president of CFIEI is E. W. Stahl (Deere), succeeding E. E. Johnson (Case), who becomes board chairman. Other officers are P. M. Soubry (Versatile), first vice-president; C. J. Munro (Int. Harvester), second vice-president; and A. R. Thomson (Deere), treasurer. Executive director is Brent Hambre. CFIEI is headquartered at 1243 Islington Ave., Toronto, Ont. M8X 1Y9, telephone 416/236-2431.



RETAIL SALES OF SELECTED FARM EQUIPMENT—Jan.-Aug., 1978 and 1979 (1)

(In Units)

	Combines Self-Propelled		Corn Heads		Hay Balers (2)		Windrowers Self-Propelled — Power Units		Windrowers Self-Propelled — Total Heads		Grinder-Mixers		Shear-Bar Forage Harvesters (3)	
	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979
Alabama	224	165	79	60	317	178	1	1	1	1	119	154	43	37
Alaska	.....	.....	.....	.....	6	4	.....	.....	.....	.....	.....	.....	.....	.....
Arizona	37	19	5	.....	22	27	47	46	51	49	6	4	7	11
Arkansas	455	295	3	7	453	344	2	2	1	1	44	43	10	14
California	137	118	25	26	160	151	221	194	241	218	3	11	40	38
Colorado	172	219	33	48	324	361	201	216	205	221	29	51	56	50
Connecticut	.....	1	.....	.....	60	57	1	.....	1	.....	1	2	10	15
Delaware	15	16	8	12	31	14	3	.....	3	.....	2	9	8	5
Florida	88	55	56	44	98	61	.....	2	.....	2	29	49	20	14
Georgia	382	328	293	274	287	183	5	1	5	1	288	387	97	91
Hawaii	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	1	.....
Idaho	214	204	5	3	393	369	224	275	236	277	13	26	39	26
Illinois	1,437	1,526	1,210	1,218	348	325	23	15	28	15	460	493	165	181
Indiana	895	791	751	667	394	337	6	8	5	8	373	453	102	119
Iowa	1,276	1,398	1,138	1,134	413	368	220	228	224	220	1,116	1,609	459	467
Kansas	1,063	1,207	116	113	356	407	283	340	291	348	173	262	117	141
Kentucky	206	212	146	110	581	383	4	3	4	4	215	243	93	88
Louisiana	308	270	4	1	116	114	.....	.....	.....	.....	11	12	21	9
Maine	4	1	.....	.....	69	71	.....	3	.....	3	.....	1	19	24
Maryland	56	54	56	35	134	107	9	7	9	6	31	38	35	44
Massachusetts	.....	.....	.....	.....	50	41	1	1	1	.....	3	1	9	10
Michigan	271	253	204	157	468	349	55	59	56	61	177	196	176	246
Minnesota	1,033	954	538	606	890	746	699	593	723	607	423	725	511	592
Mississippi	240	262	9	3	185	146	.....	.....	.....	.....	45	39	49	46
Missouri	479	562	220	229	670	556	80	70	83	70	319	496	79	117
Montana	308	235	1	4	379	329	458	397	500	418	35	56	28	23
Nebraska	765	676	433	376	222	201	387	429	404	440	283	487	189	191
Nevada	3	1	.....	.....	39	39	53	62	57	65	1	1	3	2
New Hampshire	.....	.....	.....	.....	39	41	1	.....	1	.....	.....	2	13	15
New Jersey	22	17	11	8	66	51	2	.....	2	.....	10	11	15	7
New Mexico	12	16	7	5	137	115	81	77	79	77	11	18	5	4
New York	72	77	74	75	595	621	48	55	49	55	130	89	315	338
North Carolina	174	244	152	171	479	265	2	3	2	3	140	175	54	49
North Dakota	812	826	9	14	130	74	910	745	950	796	68	145	63	58
Ohio	697	700	522	504	739	559	9	10	8	10	349	404	139	150
Oklahoma	330	384	5	5	645	773	129	144	133	147	69	117	25	35
Oregon	176	145	4	.....	318	248	262	174	276	175	12	26	58	47
Pennsylvania	115	134	87	86	876	765	61	67	61	66	214	244	253	308
Rhode Island	.....	.....	.....	.....	5	3	.....	.....	.....	.....	.....	1	.....	.....
South Carolina	154	163	98	83	149	82	.....	.....	.....	.....	57	92	28	24
South Dakota	462	360	129	126	232	144	710	669	746	713	196	298	161	169
Tennessee	217	216	78	56	715	513	2	.....	2	.....	143	196	119	99
Texas	658	644	175	173	1,022	1,150	82	97	88	105	128	186	29	51
Utah	32	33	.....	1	257	248	117	113	118	114	34	57	43	35
Vermont	.....	.....	1	.....	102	99	1	.....	1	.....	1	2	52	67
Virginia	92	92	66	81	517	417	8	6	8	6	101	125	111	91
Washington	242	284	9	28	290	238	148	157	153	165	14	17	69	62
West Virginia	2	2	1	3	332	224	.....	.....	.....	.....	19	20	20	14
Wisconsin	201	174	189	170	1,550	1,520	250	305	252	305	336	481	1,118	1,268
Wyoming	36	29	5	2	178	168	138	129	146	137	15	20	10	14
U.S. Government	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous (4)	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	.....
TOTAL	**14,575**	**14,363**	**6,955**	**6,718**	**16,848**	**14,586**	**5,948**	**5,703**	**6,204**	**5,909**	**6,248**	**8,580**	**5,086**	**5,506**

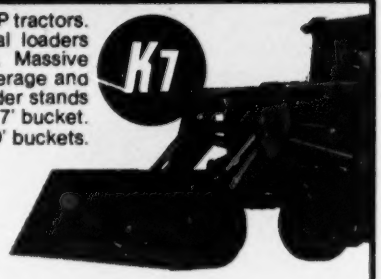
Data released November 5, 1979, Farm & Industrial Equipment Institute.

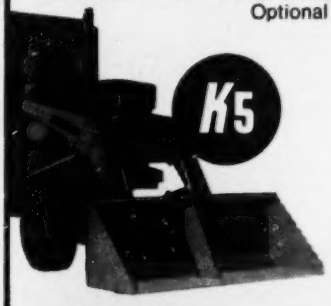
(1) Includes revisions for prior months.
(2) For making bales of under 200 lbs.
(3) Pull-type, mounted, self-propelled.
(4) Sales reported as miscellaneous are retail sales which cannot be classified by state or as U.S. Government. They include sales and dispositions that do not go through usual marketing channels such as gifts to non-profit organizations, intra-plant or company transfers, etc.

Mower Conditioners All Types 1978	1979	Manure Spreaders Conveyor-Type 1978	1979	
240	187	19	11	Alabama
1	1	1	1	Alaska
2	4	5	6	Arizona
455	478	79	87	Arkansas
46	39	46	57	California
104	127	31	54	Colorado
77	70	61	63	Connecticut
20	14	45	54	Delaware
82	67	17	26	Florida
282	218	26	40	Georgia
.....	1	.....	1	Hawaii
112	92	95	81	Idaho
655	593	897	770	Illinois
601	553	596	547	Indiana
1,288	1,185	1,835	1,950	Iowa
602	820	164	211	Kansas
1,068	1,023	259	266	Kentucky
90	91	18	22	Louisiana
79	99	91	95	Maine
138	133	201	169	Maryland
63	59	52	50	Massachusetts
725	585	611	610	Michigan
1,084	1,201	1,253	1,417	Minnesota
162	145	21	27	Mississippi
1,433	1,448	314	366	Missouri
114	100	48	41	Montana
398	504	353	440	Nebraska
2	10	2	2	Nevada
61	50	46	43	New Hampshire
76	62	42	48	New Jersey
26	24	3	5	New Mexico
827	937	1,186	1,066	New York
419	318	143	126	North Carolina
116	161	138	87	North Dakota
1,068	870	797	813	Ohio
618	794	23	25	Oklahoma
215	150	71	88	Oregon
1,002	906	1,044	1,031	Pennsylvania
6	6	3	1	Rhode Island
148	114	23	28	South Carolina
105	128	218	276	South Dakota
822	785	131	148	Tennessee
1,043	1,245	94	115	Texas
149	140	117	74	Utah
173	180	201	207	Vermont
581	626	196	180	Virginia
157	126	85	105	Washington
205	192	72	72	West Virginia
2,321	2,419	2,009	2,258	Wisconsin
140	47	43	44	Wyoming
.....	.....	.....	.....	U.S. Government
.....	.....	1	1	Miscellaneous
20,201	20,127	13,826	14,303	TOTAL

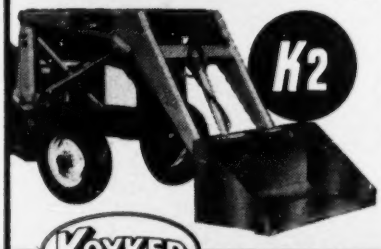
TURN FAST PROFITS WITH THIS COMPLETE LINE OF KOYKER FAST-ATTACHING LOADERS

Big, super-rugged K-7 for 110 plus HP tractors. Combines best features of industrial loaders into high-performance farm loader. Massive main frame knee for unmatched leverage and strength. Top operator visibility. Loader stands located in main frame. Standard HD 7' bucket. Optional 8' and 9' buckets.





Super-strong K-5 designed for extra-strength and stamina. Fits most tractors with cabs. Has big 18" deep main frame knee and massive 3-point wrap-around sub-frame. Rugged . . . almost one ton of steel. Big 7' twin-cylinder bucket standard. (Optional 5' and 8' buckets available.)



K-2 . . . the "work-horse" for tractors up to 60HP . . . fits most tractors with cabs. Has strength and stamina to handle toughest loading and moving jobs around the farm. Low-profile, compact. Accessories include twin-cylinder bucket, snow scoop extension, grapple fork.

Your profits depend on offering your customer the loader he needs. Contact us for information and discounts today. **Write Dept. K-84-121**

KOYKER

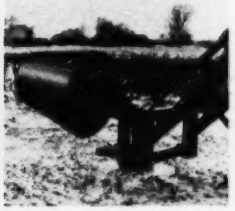
KOYKER MANUFACTURING COMPANY
Drawer 1265, Sioux Falls, So. Dakota 57101

Circle (40) on Reply Card

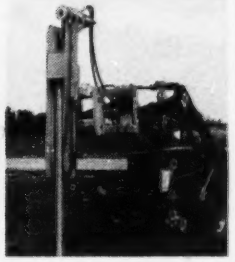
McMILLEN SUPER-COMBO POWERHEAD

A single source of smooth hydraulic power for any of these accessories

ROTADIGGER accommodates augers 4" through 36" diameter. Infinite speeds in either direction. Instant reversing.



ROTAMIXER makes tractors and utility vehicles operate like a ready mix truck. Simply reverse to discharge at any height, no dumping.



ROTADRIVER sets steel or wooden posts faster, with less effort. Operator determines impact force of 257 ft. weight.

Note economy of common mounting bracket.

For most farm or utility vehicles with hydraulic capacity. No PTO shaft. Mountings for front-end loaders, utility loaders, backhoe, and three-point hitch (Cat. I, II, III). Also check into the standard line of McMillen Hydraulic Augers. Two series in six models to 27 H.P.

For complete information, contact:

THE McMILLEN DIVISION OF STATES ENGINEERING CORPORATION
4419 Ardmore Avenue • Fort Wayne, IN 46809 • Telephone: (219) 747-6195
CALL US TOLL FREE: (800) 348-0964
Indiana Residents, Call us Collect: (219) 747-6195

Circle (41) on Reply Card

BEST AVAILABLE COPY

RECEIVED
1980

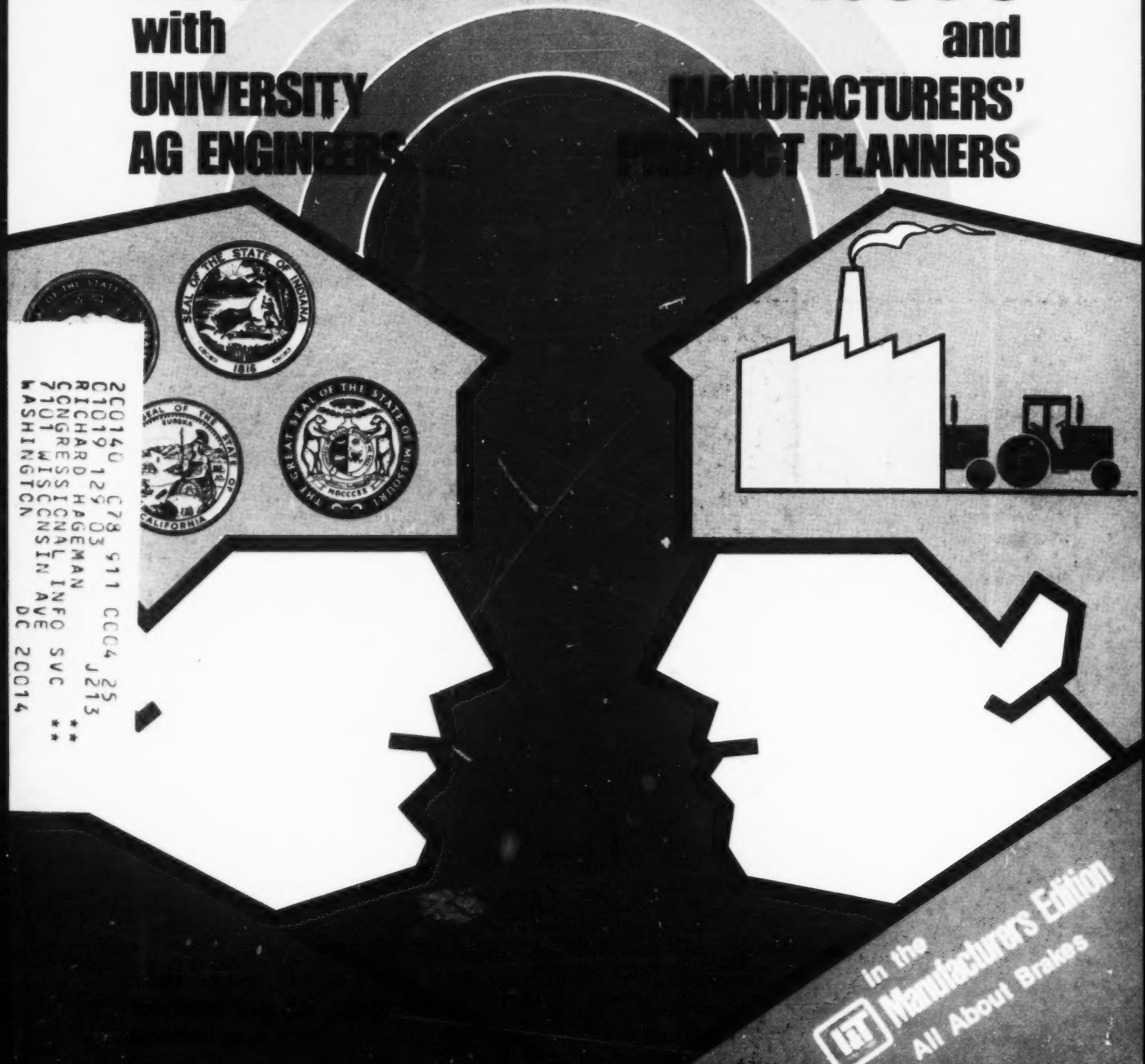
January 7, 1980
TWO DOLLARS

Serving the Farm and Industrial Equipment Industry Since 1886

Implement&Tractor

LOOKING INTO THE 1980's

with UNIVERSITY AG ENGINEERS and MANUFACTURERS' PRODUCT PLANNERS



20014O C78 911 CCC4 25
C1019 12 03 J213
RICHARD HAGEMAN
CONGRESSIONAL INFO SVC **
710I WISCONSIN AVE **
WASHINGTON DC 20014

In the Manufacturers Edition
All About Brakes

IMPLEMENT & TRACTOR
Editorial, advertising and circulation correspondence should be addressed to:
9221 Quivira Rd.
P.O. Box 12901
Overland Park, Kan. 66212
(a suburb of Kansas City, Mo.)
Telephone (913) 888-4664
Telex: 42-4156; Answerback: Intertec OLPK

EDITORIAL
Bill Fogarty, Editor
Gary Owens, Associate Editor
Charles G. Ewing, Editor, Red Book
Pat Blanton, Editor, Product File
Dudley Rose, Senior Art Director
Anita Blattner, Art Director
Irma Allread, Editorial Assistant

Contributing Editors:
Paul Crisford, Britain and Europe
Frank Buckingham, Agricultural Engineering
Melvin E. Long, Engineering and Production Topics

CIRCULATION
John Arnst, Director
Evelyn Rogers, Manager

ABP A member of American Business Press

A member of Audit Bureau of Circulations

ADVERTISING SALES
Emmett P. Langan, Director
Lew Bray, Production
(Regional advertising sales offices listed on ad index page.)

ADMINISTRATION
Geo. H. Seferovich, President
Emmett P. Langan, Publisher

IMPLEMENT & TRACTOR (USPS 401-750) (with which is combined Farm Implement News) is published twice monthly except in January and March, when third issues are published, and in July and December, when one issue only is published, by INTERTEC PUBLISHING CORP., 9221 Quivira Rd., Overland Park, Ks. 66212 (a suburb of Kansas City, Mo.).

Subscription information: Implement & Tractor is edited for persons in the farm and industrial equipment industry who function in the areas of retail sales and service, distribution sales and service, marketing, engineering, financing, manufacturing and general management. Subscription prices to qualified subscribers: U.S. and Canada, one year—$10, two years—$15; elsewhere, one year—$13; two years—$21. Subscription prices to all others: U.S. and Canada, one year—$30; two years—$50; elsewhere, one year—$35, two years—$70. Single copies, $2, except Annual Statistical Number, $4; Product File issue, $5; Red Book issue, $5. Adjustment necessitated by subscription termination at single copy rate. Extra charges for service on back issues. Allow 6-8 weeks for change of address and new subscriptions.

INTERTEC PUBLISHING CORP.

January 7, 1980 • Vol. 95 • No. 1

Implement&Tractor

The Business Magazine of the Farm and Industrial Equipment Industry

15th Engineering Concepts Edition

LOOKING AT THE 1980's

11: Introduction.

12: Product Planners Proclaim, 'You Ain't Seen Nothing Yet!' What directions can farm equipment design be expected to take in the next 10 years? Several manufacturer product planners discuss future probabilities and possibilities in terms of equipment size, power and weight versus speed, automatic guidance, the impact on machine design of larger farms and curtailed availability of traditional fuels, etc.

16: University Ag Engineers Foresee New Requirements, New Constraints, New Opportunities. Engineers in four ag engineering departments make educated prognostications for the 80's, on farm size, implement size, harvest and tillage changes, cropping patterns, fuel types and economy, other issues.

20: Big-Tractor Debuts: M-F, A-C, White. Meanwhile, back in the 70's, three big tractor companies brought three new 100-horsepower-plus models barrelling into the market at year's end.

DEPARTMENTS

What's Ahead	4	What's New	36
New Literature	28	Auction Prices	38
Industry in Motion	33	News Briefs	40
Farm Equipment Patents	34	Classified Ads	42
		Index to Advertisers	44

Controlled circulation postage paid at Shawnee Mission, Ks. 66201.
Postmaster: Return Form 3579 to Implement & Tractor, P.O. Box 12901, Overland Park, Ks. 66212.

©Copyright, 1980, INTERTEC PUBLISHING CORP. All rights reserved. Material may not be reproduced or photocopied in any form without written permission of publisher.

AUCTION PRICES OF USED EQUIPMENT

An exclusive I&T monthly report of actual prices paid recently at these leading national wholesale auctions.

Asterisk beside tractor price indicates highest bid offered on tractors which were not sold.

JONES FARM EQUIPMENT CO. Dothan, Alabama (November 13, 1979)

ALLIS-CHALMERS TRACTORS

I400, ldr., backhoe, 1967 (Good) 3200
200 diesel, 1973 (Good) 5700
185 diesel, 1971 (Good) 6300*
175 diesel, 1975 (Excellent) 7100*
D15, 1967 (Good) 1800*
D15, 1965 (Fair) 1150*
D10, 1961 (Fair) 875

CASE TRACTORS

930 diesel, 1967 (Fair) 2750
680 diesel, ldr., backhoe, 1969 (Fair) 3700*
530, ldr., 1962 (Fair) 1700*
530, ldr., backhoe, 1961 (Good) 2850
VAC, 1952 (Fair) 400*

DEUTZ TRACTORS

6006 diesel, 1974 (Good) 4200
5505 diesel, 1969 (Fair) 850*

MASSEY-FERGUSON TRACTORS

1130 diesel, 1969 (Good) 4400
1130 diesel, cab, 1968 (Good) 5200*
1105 diesel, duals, 1973 (Excellent) 8950
1100 diesel, 1970 (Good) 5500
1100 diesel, 1968 (Good) 5200
1100 diesel, 1967 (Fair) 4600
1085 diesel, 1976 (Excellent) 9600
1085 diesel, 1974 (Good) 6700
1080 diesel, 1972 (Good) 4200
1080 diesel, 1969 (Fair) 3300*
1080 diesel, 1969 (Good) 4200*
275 diesel, 1975 (Excellent) 7050
265 diesel, 1975 (Good) 7000*
255 diesel, 1975 (Good) 5000*
255 diesel, 1975 (Good) 5150
235 diesel, 1975 (Good) 4350*
235 diesel, 1975 (Fair) 2425
180 diesel, 1968 (Fair) 3100*
180 diesel, 1967 (Good) 3500*
180 diesel, 1967 (Good) 3500
175 diesel, 1973 (Fair) 3650
175 diesel, 1973 (Good) 4550*
175 diesel, 1970 (Fair) 3300*
175 diesel, 1968 (Fair) 3250
175 diesel, 1966 (Fair) 3150*
165 diesel, 1971 (Good) 7500
165 diesel, 1971 (Fair) 3075
165 diesel, 1966 (Good) 3300*
165 diesel, 1966 (Good) 3650
165 diesel, 1966 (Good) 3300*
165 diesel, 1966 (Fair) 2650*
150 diesel, 1967 (Excellent) 4000
150 diesel, 1965 (Good) 3300*
135 diesel, 1972 (Good) 3375
135 diesel, 1972 (Good) 3300*
135, 1967 (Fair) 2500
135 diesel, 1966 (Good) 2950
135 diesel, 1966 (Fair) 2950*
65 LP, 1964 (Fair) 1850
65 diesel, ldr., 1964 (Fair) 2200*
65 diesel, 1964 (Good) 2050
50, 1960 (Good) 1750*
40, 1956 (Good) 1975*
40 LP, 1956 (Fair) 1050
35, 1963 (Good) 2000
35 diesel, 1963 (Fair) 2075
35 diesel, 1962 (Rough) 1000
35 diesel, 1962 (Good) 2200
35 diesel, 1961 (Good) 2200*
35, 1956 (Good) 1950*
35, 1955 (Good) 1900*
35, 1955 (Fair) 1325
35, 1955 (Rough) 975
35, 1955 (Fair) 1300*
TO30, 1952 (Fair) 525
TO20, 1950 (Fair) 500

FORD-FERGUSON TRACTOR

9N, 1941 (Fair) 600*

FORD TRACTORS

8600 diesel duals, 1975 (Good) 6900
8600 diesel, 1974 (Good) 7400
5000 diesel, 1969 (Excellent) 6000
5000 diesel, 1968 (Good) 4300
5000 diesel, 1967 (Fair) 3900
4410 diesel, 1965 (Rough) 1375*
4000 diesel, 1965 (Fair) 2600
4000 diesel, Select-O-Speed, 1965 (Fair) 2000*
4000, 1963 (Fair) 1400*
4000, Select-O-Speed, 1963 (Rough) 775*
3500 diesel, 1971 (Fair) 2200*
3400 diesel, trencher, bld., 1973 (Good) 4200*
3400 diesel, ldr., 1966 (Fair) 2550*
3400 diesel, ldr., 1965 (Fair) 1750
3000 diesel, 1973 (Good) 4350
3000 diesel, 1972 (Fair) 2700
3000 diesel, 1971 (Good) 3175
3000 diesel, 1970 (Good) 3500*
3000 diesel, 1969 (Good) 3225*
3000 diesel, 1969 (Good) 3400
3000, 1968 (Good) 3200

3000, 1968 (Fair).....2550*
2000, 1966 (Fair).....2650*
2000, Idr., backhoe, 1963 (Rough).....1300
971 diesel, corn picker, Select-O-Speed, 1958.....850*
871, Select-O-Speed, 1958 (Fair).....1100*
871 diesel, Select-O-Speed, 1958 (Fair).....1200
861, 1958 (Good).....2125
851 diesel, 1958 (Fair).....1350*
851, 1958 (Fair).....1425
850, 1956 (Good).....2150*
850, 1956 (Good).....2150*
850, 1956 (Fair).....1800
641, 1961 (Good).....2250
621, Idr., 1960 (Fair).....2175*
621, 1960 (Good).....2100*
NAA, 1954 (Good).....1850
NAA, 1954 (Good).....1800
NAA, 1954 (Good).....1950*
Jub., 1953 (Good).....1875*
Jub., 1953 (Good).....1900*
Jub., 1953 (Fair).....1400
Jub., 1953 (Good).....1725
8N, 1952 (Excellent).....1800
8N, 1950 (Good).....1350
8N, 1948 (Fair).....700
8N, 1948 (Fair).....850
8N, 1948 (Fair).....825
8N, 1948 (Fair).....850

INTERNATIONAL HARVESTER TRACTORS

2400 diesel, Idr., backhoe, 1971 (Good).....4100*
2400 diesel, Idr., 1971 (Fair)...3250
1256 diesel, cab, duals, 1968 (Good).....4350
1256 diesel, 1967 (Rough).....2300
664 diesel, 1972 (Good).....5300
574 diesel, 1972 (Fair).....4300
300, 1955 (Good).....675
Sup. H, 1953 (Excellent).....950
H, 1950 (Good).....375
Sup. A, cult., pit., 1949 (Good).....1650
Cub 154 Loboy, 1973 (Good)...1500
Cub 154 Loboy, mo., 1968 (Good).....1575
Cub, Loboy, mo., 1957 (Good).....1375
Cub, cult., 1948 (Fair).....1150
Cub, mo., 1948 (Fair).....1000

JOHN DEERE TRACTORS

4020 diesel, 1968 (Excellent)...7850
4010 diesel, 1962 (Fair).....3250
3020 diesel, 1968 (Fair).....3950*
3020 diesel, 1965 (Good).....5500
3020 diesel, 1964 (Good).....4400
3010 diesel, 1962 (Fair).....1975
2630 diesel, 1975 (Excellent)...7300
2240 diesel, 1976 (Good).....6750*
1530 diesel, 1974 (Good).....4400
1520 diesel, 1972 (Good).....4350
420, 1957 (Fair).....925
330, 1960 (Good).....1400*
A, 1949 (Fair).....375
B, 1940 (Fair).....165
MT, 1952 (Good).....600

LEYLAND TRACTORS

270 diesel, 1975 (Good).....1900*
154 diesel, 1974 (Good).....2500*

LONG TRACTORS

900 diesel, 1975 (Good).....3500
560 diesel, (Fair).....2000
560 diesel, (Good).....2600*
460 diesel, 1976 (Good).....3000
384 diesel, 1971 (Good).....2300
380 diesel, 1977 (Good).....3700*

MINNEAPOLIS-MOLINE TRACTOR

Jet Star 3 diesel, 1965 (Rough)..250

OLIVER TRACTORS

550 diesel, 1963 (Fair).....925
550 diesel, 1961 (Good).....2150

NOTES
Prices reported are for individual sales at wholesale on "as is," "cash and carry" basis.
Prices reported are NOT averages.

Condition classifications: EXCELLENT means—Engine: in perfect condition, 400 to 600 hours of use; Rubber: 80% tread remaining, no breaks or cracks; Paint: original and bright; General Appearance: excellent.

GOOD means—Engine: good running condition; Rubber: 70% tread remaining, no breaks or cracks; Paint: original paint or a good repaint job; General Appearance: good over-all.

FAIR means—Engine: possibly in need of a minor overhaul to restore; Rubber: 60% tread remaining, some cracking evident in side walls; Paint: only fair, weathered and some rust apparent; General Appearance: worn, some dents, minor parts such as gage covers missing or broken.

ROUGH means—Engine: obviously in need of a major overhaul; Rubber: smooth; Paint: scarred, weathered, rusty, needs painting urgently; General Appearance: dents, ruptures, broken parts, loose wires, some components such as lights broken, missing or inoperative.

DEMONSTRATOR means—used for demonstrating only and in practically new condition.